



Bears & Barriers

Capitalizing on Natural Ecology to Benefit Yellowstone Cutthroat Trout



A recently-completed fish passage project in the Greater Yellowstone Ecosystem is using Tygee Creek's natural ecology to benefit a genetically unique population of Yellowstone cutthroat trout. With the

removal of two road culverts and the preservation of two features of the natural ecosystem, the Tygee population of cutthroat trout can now enjoy 2.5 miles of pristine stream habitat while being insulated from possible threats from nonnative species and anglers.

What do grizzly bears have to do with fish passage?

Although bears may be unconventional partners in fish conservation, the population of Yellowstone cutthroat trout in Tygee Creek may actually benefit from the presence of grizzly bears. The Tygee Creek Watershed is managed to conserve and provide habitat for grizzly bears. As a result, it's common to see grizzly bears along upper Tygee Creek. Their presence helps to minimize the threat of fishing to the Tygee population of Yellowstone cutthroat trout; many anglers opt to cast their lines in nearby Henrys Lake or Henrys Fork rather than risk an encounter with a grizzly. So, even though Tygee Creek is open for fishing, the creek's cutthroat aren't lured by quite as many hooks as they might be if the grizzlies were not around.



Grizzly bears along Tygee Creek may help to protect the resident population of Yellowstone cutthroat trout by scaring away anglers. Photo Credit: Jason Bechtel

Not All Barriers Are Bad—History of a Unique Population

It can be easy to fall into the habit of thinking of all passage barriers as bad for fish. But, not all barriers, particularly natural barriers, are bad. In the case of Tygee Creek, a waterfall has isolated the resident population of cutthroat trout for thousands of years. This has protected the population's genetic uniqueness by preventing nonnative rainbow trout and brook trout from accessing upper Tygee Creek. When related trout species intermingle, nonnative fish may cross-breed with native fish, compete with them for food and habitat, and even prey upon juvenile fish. The waterfall has been an important feature of the natural ecology of Tygee Creek that has preserved this unique population.



The Service & Partners Finish the Job

While some passage barriers can be beneficial for fish, human-made barriers often pose a threat. Land use changes and irrigation practices around Tygee Creek have limited the creek's historic flow and restricted access to quality habitat. Two road culverts along upper Tygee Creek were the primary barriers that blocked fish from accessing their full historic range. Fixing the barriers and restoring stream flows to better serve fish involved a multi-year, multi-partner effort that addressed both fish passage *and* water quality.

The first improvement was completed in 1999 with the replacement of one culvert. The final component of the project was completed in 2012 when the Caribou-Targhee National Forest and the Service replaced the second culvert. The 2012 work also addressed other habitat concerns by making road improvements that minimize the amount of sediment that washes into Tygee Creek. Now that the job is finally done, the Tygee population of Yellowstone cutthroat trout can enjoy the full range of upper Tygee Creek.

"When we approach a project like this we try to address other immediate impacts the roads are having related to sediment and delivery and not just focus solely on passage, we need everything working together."

--Lee Mabey, Forest Biologist,
Caribou-Targhee National Forest

"It's great to see this population of fish within Tygee Creek that has been isolated for thousands of years by a natural barrier have its final man made barrier removed."

--Lee Mabey, Forest Biologist,
Caribou-Targhee National Forest



Before: The existing 36-inch pipe culvert on Tygee Creek prevented Yellowstone cutthroat trout from migrating upstream to spawn. Photo Credit: USFWS



Now: Replacing the existing culvert with an 18-foot bottomless arch culvert allows fish to swim more freely because the bottom of the culvert is natural stream bed. Photo Credit: USFWS



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